

ABSTRACT

A microporous gas permeable membrane having an ultraphobic liquid contact surface.

In the invention, ultraphobic surface is provided on the liquid contact surface of the membrane.

In an embodiment of the invention, the ultraphobic surface includes a multiplicity of closely

5 spaced microscale to nanoscale asperities formed on a substrate. When liquid at or below a predetermined pressure value is contacted with the ultraphobic liquid contact surface of the membrane, the liquid is “suspended” at the tops of the asperities, defining a liquid/gas interface plane. The area of the liquid/gas interface plane includes the area of the ultraphobic surface as well as the combined area of the micropores, so that the gas transfer rate and efficiency of the
10 membrane is enhanced over prior membranes wherein the liquid/gas interfacial area is limited to only the area of the micropores.